AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) ~~Method~~ A method for enhancing ~~the~~ a ratio between ~~the~~ a main lobe ~~(5)~~ and grating lobes ~~(7)~~ in an antenna array ~~(1)~~, the antenna array comprising a number n of ~~n~~ antenna elements ~~(2)~~, ~~which~~ the method ~~comprises the steps of~~ comprising:

- receiving analog signals on a number m of ~~m~~ antenna array ~~(1)~~ elements ~~(2)~~;

-producing a radiation diagram for the array ~~(1)~~ from ~~the~~ values in the signals, and

~~characterized in that the method comprises~~

further comprising performing the acts ~~the steps~~ of~~:~~;

~~step~~ act a) - receiving analog signals on all m antenna elements ~~(2)~~ at a first time (t_1), where m is an integer equal to or less than n but greater than two;

- producing a first radiation diagram from the values in the signals from the first time (t_1);

-saving the first radiation diagram from the first time (t_1)

~~step~~ act b) - switching off or reducing the signal from one antenna element ~~(2')~~, located between ~~the~~ two outermost antenna elements ~~(2)~~ of the array, at a second time (t_2);

-receiving analog signals on all m antenna elements ~~(2)~~ except from the one switched off or reduced antenna element ~~(2')~~;

- producing a second radiation diagram from the values in the signals from the second time (t_2)

-saving the second radiation diagram;

~~step~~ act c) -adding ~~the~~ values of the first radiation diagram to ~~the~~ corresponding values of the second radiation diagram and thereby producing a sum radiation diagram.

2. (Currently Amended) ~~Method~~The method according to claim 1, ~~characterized in that;~~wherein

-the sequence according to ~~step~~act b) is repeated x times until only the m-x antenna elements ~~(2)~~ on the outermost ends remain, where x is an integer less than m-2 and greater than zero, denoting the number of removed or reduced antenna elements ~~(2')~~, and where;

-~~step~~act c) is used for producing a sum radiation diagram by adding all the corresponding values of the radiation diagrams from all the x times (t_x).

3. (Currently Amended) ~~Method~~The method according to claim 1, ~~characterized in that~~further comprising converting the analog signals ~~are converted~~ to digital signals by sampling before the radiation diagrams are produced.

4. (Currently Amended) ~~Method~~The method according to claim 1, ~~characterized in that~~further comprising representing the values ~~are represented~~ in the radiation diagrams as the gain ($G(\theta)$) for a number of angles (θ).

5. (Currently Amended) ~~Method~~The method according to claim 1, ~~characterized in that~~wherein the distance between each of the antenna elements ~~(2)~~ is the wavelength lambda divided by two or less.

6. (Currently Amended) ~~Method~~The method according to claim 1, ~~characterized in that~~wherein the angle (θ) is varied between $-\pi/2$ and $\pi/2$.

7. (Currently Amended) Antenna array system ~~(20) comprising~~ comprising:

an antenna array ~~(1)~~ with a number n of ~~n~~ antenna elements ~~(2), where the antenna array system (20) comprises:~~;

means ~~(21)~~ for enhancing ~~the~~ a ratio between ~~the~~ a main lobe ~~(5)~~ and grating lobes ~~(7), wherein the system comprises;~~

[[-]]wherein the antenna array ~~(1)~~ is adapted ~~for receiving~~to receive analog signals on a number m of ~~m~~ antenna array elements ~~(2), and~~;

[[-]]means ~~(22)~~ for producing a radiation diagram for the array from the values in the digital signals,

~~characterized in that the system comprises;~~

a) [[-]]wherein the antenna array ~~(1)~~ is adapted ~~for receiving~~to receive analog signals on all m antenna elements ~~(2)~~ at a first time (t_1), where m is an integer equal to or less than n but greater than two;

[[-]] means ~~(22)~~ for producing a first radiation diagram for the array ~~(1)~~ from ~~the~~ values in the digital signals from the first time (t_1);

[[-]]means ~~(23)~~ for saving the first radiation diagram from the first time (t_1)

b) [[-]] means ~~(24)~~ for switching off or reducing the signal from one antenna element ~~(2')~~, located between ~~the~~ two outermost antenna elements ~~(2)~~ of the array, at a second time (t_2);

[[-]]wherein the antenna array ~~(1)~~ is adapted ~~for receiving~~to receive analog signals on all m antenna elements ~~(2)~~ except from the one switched off or reduced antenna element ~~(2')~~;

[[-]]means ~~(22)~~ for producing a second radiation diagram for the array from ~~the~~ values in the digital signals from the second time (t_2)

[[-]]means ~~(23)~~ for saving the second radiation diagram;

c) [[-]]means ~~(25)~~ for adding ~~the~~ values of the first radiation diagram to ~~the~~ corresponding values of the second radiation diagram and thereby producing a sum radiation diagram.

8. (Currently Amended) ~~Antenna~~ An antenna array system ~~(20)~~ according to claim 7, ~~characterized in that the system comprises:~~ further comprising:

[[-]]means ~~(22, 23, 24)~~ for repeating the sequence according to b) x times until only the m-x antenna elements ~~(2)~~ on the outermost ends remain, where x is an integer less than m-2 and greater than zero, denoting the number of removed or reduced antenna elements ~~(2')~~, and;

[[-]]means ~~(25)~~ according to c) for producing a sum radiation diagram by adding all the corresponding values of the radiation diagrams from all the x times (t_x).

9. (Currently Amended) An antenna ~~Antenna~~ array system ~~(20)~~ according to claim 7, ~~characterized in that the system comprises~~ further comprising means ~~(26)~~ for converting the analog signals to digital signals by sampling before the radiation diagrams are produced.

10. (Currently Amended) An antenna ~~Antenna~~ array system ~~(20)~~ according to claim 7, ~~characterized in that the system comprises~~ further comprising means ~~(22)~~ for representing the values in the radiation diagrams as the gain ($G(\theta)$) for a number of angles (θ).

11. (Currently Amended) An antenna ~~Antenna~~ array system ~~(20)~~ according to claim 7, ~~characterized in that the~~ wherein a distance between each of the antenna elements ~~(2)~~ is the wavelength lambda divided by two or less.

12. (New) The method of claim 1, further comprising using the sum radiation diagram to determine a direction of arrival of the analog signals received by the antenna array.

13. (New) An antenna array system according to claim 7, further comprising means for using the sum radiation diagram to determine a direction of arrival of the analog signals received by the antenna array.

14. (New) A computer program product comprising instructions stored on a storage medium which, when executed, perform the acts of:

producing a first radiation diagram from values received at a first time (t_1) from analog signals received on m antenna elements of an antenna array, the antenna array comprising n number of antenna elements, where m is an integer equal to or less than n but greater than two;

switching off or reducing, at a second time (t_2), a signal from one antenna element, located between two outermost antenna elements of the array and then producing a second radiation diagram from the values in the signals receving at the second time (t_2) from all m antenna elements except from the one switched off or reduced antenna element;

producing a second radiation diagram from the values in the signals from the second time (t_2)

adding values of the first radiation diagram to corresponding values of the second radiation diagram and thereby producing a sum radiation diagram.

15. (New) The computer program product of claim 14, wherein the instructions, when executed, perform the further act of using the sum radiation diagram to determine a direction of arrival of the analog signals received by the antenna array.